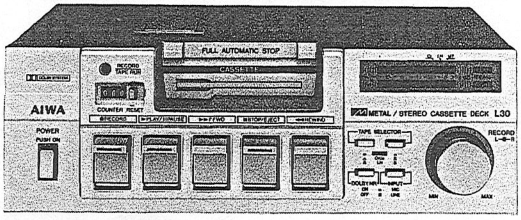
STEREO CASSETTE DECK

MODEL NO. SD-L30E,K,G

AIWA®

(SERVICE MANUAL)

Code No. 19-300-000-36



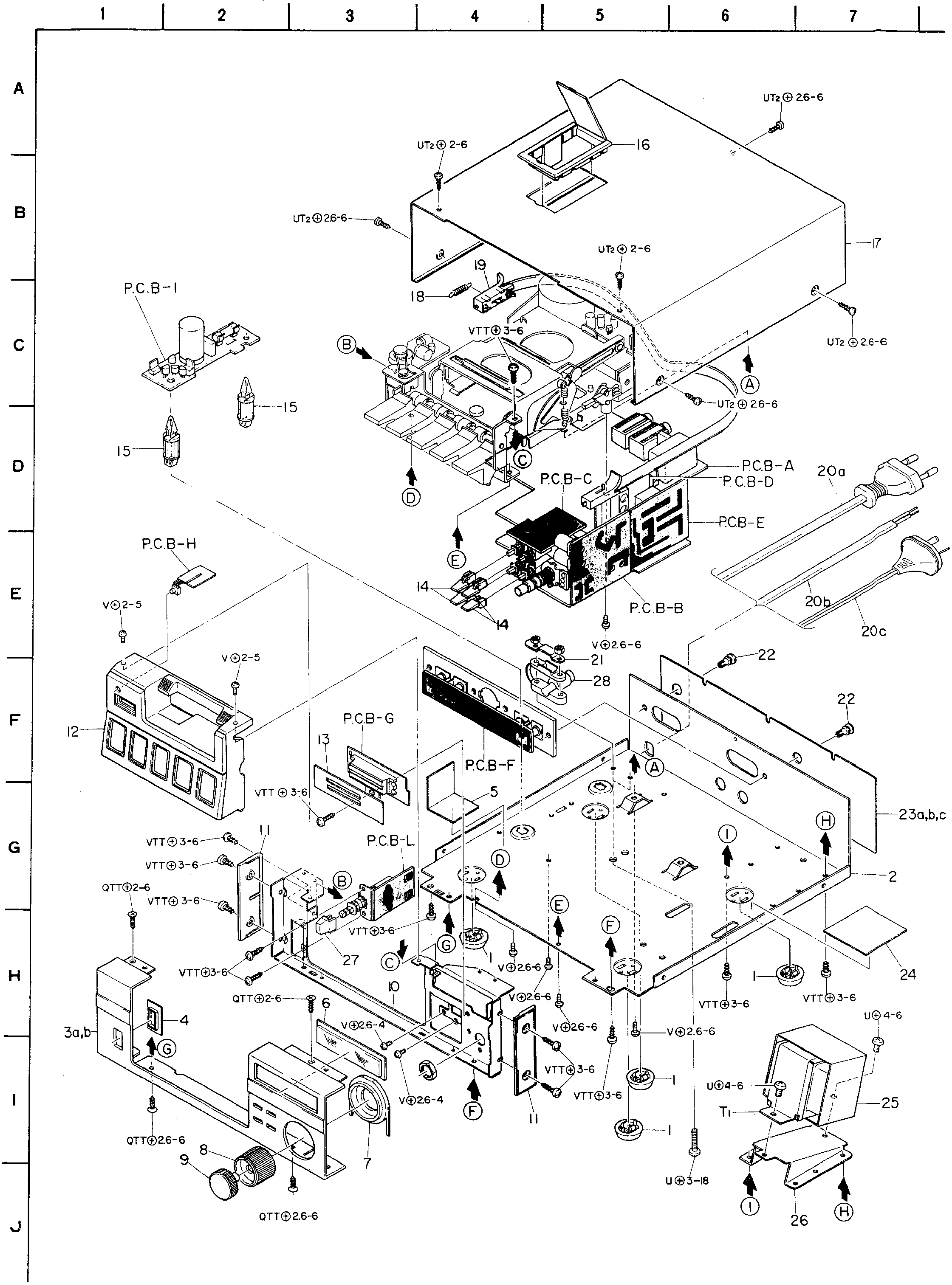
DATE OF ISSUE 7/1980

SPECIFICATIONS

Semiconductors:	6 IC's, 19 transistors, 10 diodes, 11 LED's
Power source:	E model AC 220V, 50 Hz K,G model AC 240V, 50 Hz
Power consumption:	10W
Dimensions:	210(W) x 71(H) x 230(D) mm
Weight:	2.8 kg
Track system:	4-track 2-channel stereo
Tape speed:	4.8 cm/s ± 1%
Wow & flutter:	According to DIN 45500 Less than 0.20% Less than 0.09% (WRMS)
Automatic stop system:	Full auto-stop
Automatic shut-off action time:	5 ± 3 s.
Pinch roller pressure:	300 ± 50 g (2.94 ± 0.49N)
Take-up torque:	50^{+20}_{-10} g-cm (490^{+196}_{-98} mN·m)
FF & rewind torque:	140^{+60}_{-50} g-cm (1372^{+588}_{-490} mN·m)
FF & rewind time:	Less than 90 s (w/c-60 cassette)
Playback output: (TTA-161)	0.58 ± 0.05V (LINE)
Playback noise:	Less than 2.0 mV
Rec./Pb output: (400 Hz, 0 VU)	0 VU ± 1.5 dB (LINE)
Rec./Pb distortion: (400 Hz, 0 VU)	METAL Less than 1.5% CrO_2 Less than 2.0% LH Less than 1.2%
Rec./Pb S/N: (400 Hz)	More than 43/45 dB (METAL, CrO_2, LH, DOLBY NR OFF/ON)
Channel separation: (1 kHz, 0 VU)	More than 35 dB
Cross talk: (1 kHz, 0 VU)	More than 60 dB
Erasing ratio: (400 Hz, 0 VU + 10 dB)	More than 60 dB
Level indicator display error:	± 1.5 dB
Dolby effect:	More than 8 dB
Bias frequency:	85 kHz
Frequency response:	METAL 25 ~ 16,000 Hz CrO_2 25 ~ 16,000 Hz LH 25 ~ 14,000 Hz
Motor:	DC servo motor
Head:	Hard premalloy head (for Rec./Pb) Ferrite head (for Erase)
Input:	MIC; Max. input sensitivity 0.3 mV (200Ω ~ 10kΩ suitable) LINE IN; Max. input sensitivity 50 mV (More than 50 kΩ)
Output:	LINE OUT; Standard output level 0.41V (0 VU) Optimum load impedance More than 50 kΩ

- Specifications and external appearance are subject to change without due to product improvement.
- Dolby Noise Reduction System is licensed from Dolby Laboratories.
- The name "Dolby" and ꟿ symbol are trademarks of Dolby Laboratories.

EXPLODED VIEW—1


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
UT2 ⊕ 2.6-6
16
UT2 ⊕ 2-6
UT2 ⊕ 2.6-6
17
UT2 ⊕ 2-6
19
18
UT2 ⊕ 2.6-6
P.C.B-1
VTT ⊕ 3-6
B
A
UT2 ⊕ 2.6-6
15
15
C
P.C.B-A
D
P.C.B-C
P.C.B-D
20a
P.C.B-E
P.C.B-H
E
14
14
P.C.B-B
20b
20c
V ⊕ 2-5
V ⊕ 2.6-6
21
22
V ⊕ 2-5
28
22
12
P.C.B-G
P.C.B-F
13
A
5
VTT ⊕ 3-6
23a,b,c
VTT ⊕ 3-6
11
P.C.B-L
D
H
VTT ⊕ 3-6
I
QTT ⊕ 2-6
B
2
VTT ⊕ 3-6
E
VTT ⊕ 3-6
F
G
27
C
1
V ⊕ 2.6-6
24
VTT ⊕ 3-6
1
VTT ⊕ 3-6
VTT ⊕ 3-6
QTT ⊕ 2-6
10
V ⊕ 2.6-6
VTT ⊕ 3-6
6
V ⊕ 2.6-4
V ⊕ 2.6-6
V ⊕ 2.6-6
U ⊕ 4-6
3a,b
4
G
VTT ⊕ 3-6
U ⊕ 4-6
1
V ⊕ 2.6-4
F
11
VTT ⊕ 3-6
25
T1
1
QTT ⊕ 2.6-6
8
7
9
U ⊕ 3-18
QTT ⊕ 2.6-6
I
H
26

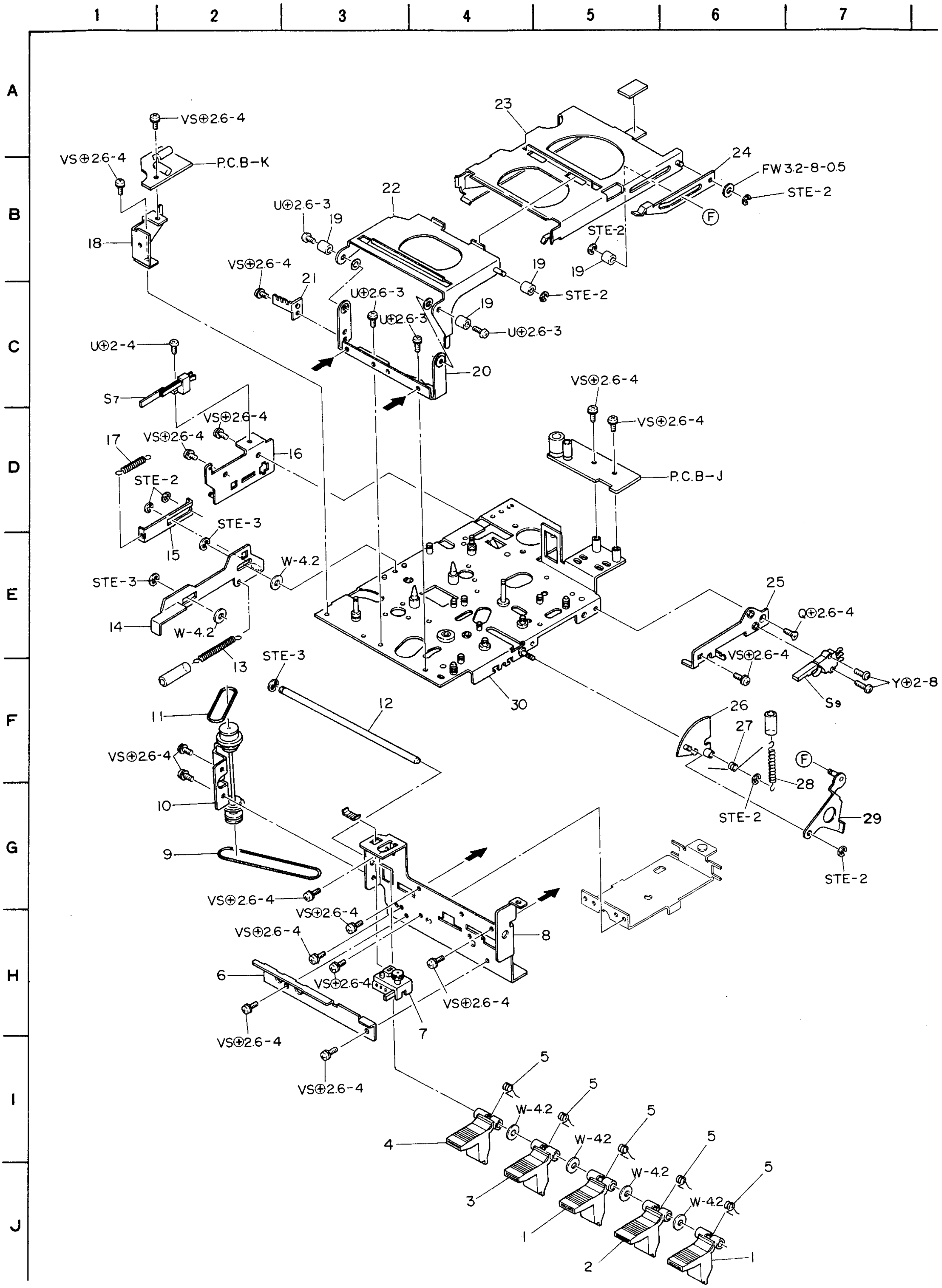
PARTS LIST

MECHANICAL PARTS

- * mark in this part list shows exclusive part (which is used) for only Model No. SD-L30.

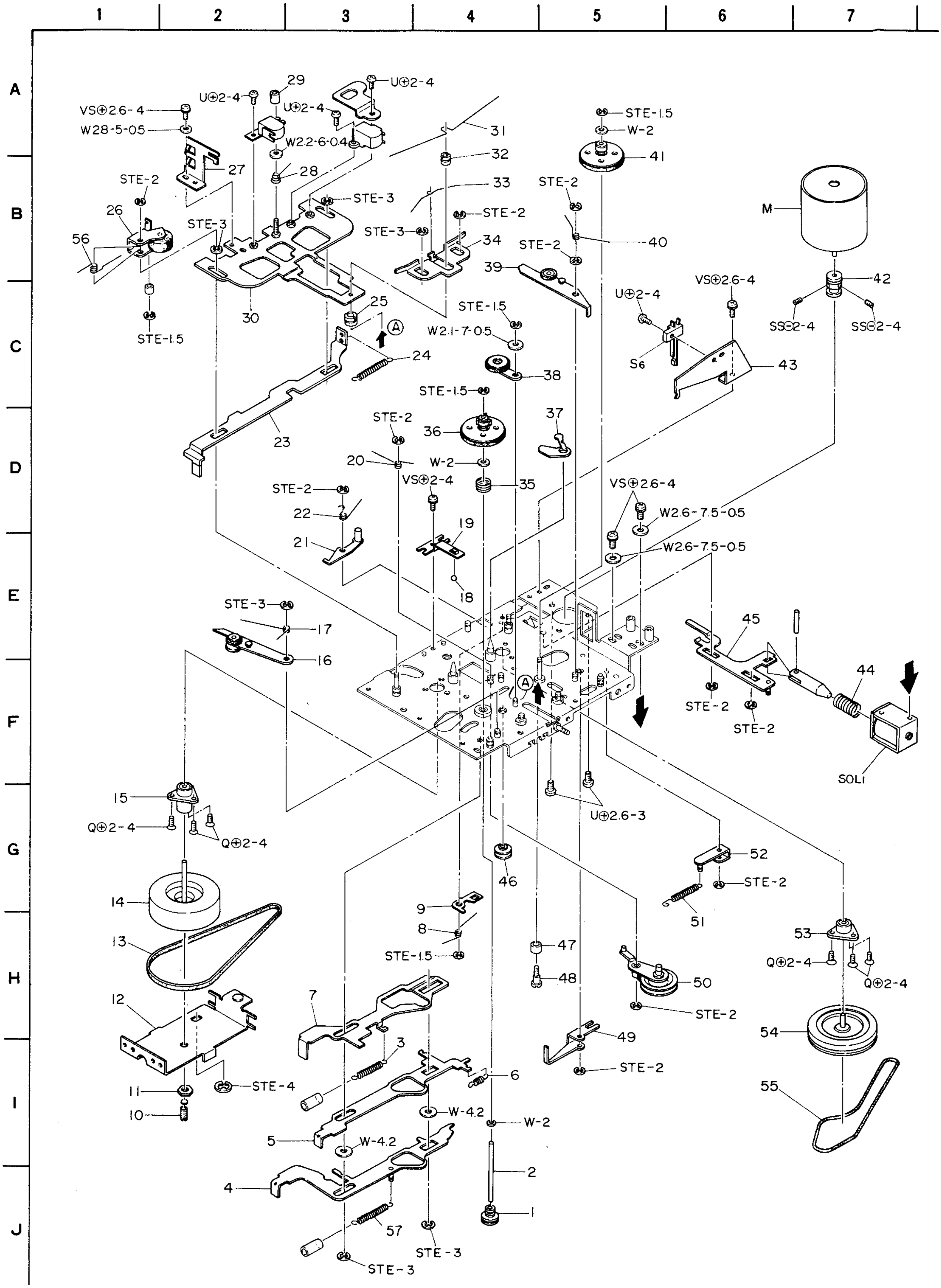
Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	85-745-019-01		Foot		4
1-2	82-164-201-01		Chassis, Amp.	*	1
1-3a	82-164-048-01		Panel, Front (E model only)	*	1
1-3b	82-164-038-01		Panel, Front (K,G model only)	*	1
1-4	82-745-012-01		Guide, Push-button C		1
1-5	82-735-628-01		Sheet, Insulation		1
1-6	82-164-015-01		Window, LED	*	1
1-7	82-751-021-01		Decorative plate G, Volume knob	SA-C50	1
1-8	82-164-011-01		Knob, REC (Low)	*	1
1-9	82-164-010-01		Knob, REC (Up)	*	1
1-10	82-164-202-01		Chassis, Front	*	1
1-11	82-745-003-01		Panel L, Side		2
1-12	09-047-178-01		Front cabinet ass'y	*	1
	82-164-003-01		Cabinet, Front	*	1
	82-164-005-01		Cassette lid	*	1
	82-164-007-01		Push-key plate	*	1
	82-164-006-01		Cassette plate	*	1
	82-150-208-11		T-spring, Cassette lid	SD-L22	1
	82-150-206-01		Shaft, Cassette lid	SD-L22	1
	82-150-211-01		Adhesive sheet, Cassette plate	SD-L22	1
	82-150-212-01		Adhesive sheet, PK plate	SD-L22	1
1-13	82-164-008-01		Plate, LED	*	1
1-14	82-745-008-01		Push-button A		4
1-15	82-150-204-01		Holder, Circuit board	SD-L22	2
1-16	82-164-009-01		Head lid	*	1
1-17	82-164-002-01		Cabinet, Steel	*	1
1-18	82-150-207-01		E-spring, REC switch	SD-L22	1
1-19	87-034-925-01		Remote switch wire		1
1-20a	87-034-877-01		AC power cord (E model only)		1
1-20b	87-034-872-01		AC power cord (K model only)		1
1-20c	87-034-892-01		AC power cord (G model only)		1
1-21	82-735-206-01		Plate, IC		1
1-22	87-085-102-01		Nylon rivet		2
1-23a	82-164-044-01		Jack plate (E model only)	*	1
1-23b	82-164-045-01		Jack plate (K model only)	*	1
1-23c	82-164-046-01		Jack plate (G model only)	*	1
1-24	82-730-622-01		Insulation fiber		1
1-25	82-150-635-01		Core ring	SD-L22	1
1-26	82-150-214-01		Holder, Power transformer	SD-L22	1
1-27	82-745-010-01		Push-button C		1
1-28	87-085-166-01		Holder, AC power cord		1

EXPLODED VIEW–2


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
VS⊕2.6-4
P.C.B–K
VS⊕2.6-4
18
23
24
FW 3.2-8-0.5
STE-2
Ⓕ
22
U⊕2.6-3
19
STE-2
19
VS⊕2.6-4
21
19
STE-2
U⊕2.6-3
U⊕2.6-3
19
U⊕2.6-3
U⊕2-4
20
S7
VS⊕2.6-4
VS⊕2.6-4
VS⊕2.6-4
17
VS⊕2.6-4
16
P.C.B–J
STE-2
STE-3
15
W-4.2
STE-3
25
Q⊕2.6-4
14
W-4.2
VS⊕2.6-4
13
STE-3
Y⊕2-8
30
S9
12
26
11
27
VS⊕2.6-4
Ⓕ
28
10
STE-2
29
9
STE-2
VS⊕2.6-4
VS⊕2.6-4
VS⊕2.6-4
8
6
VS⊕2.6-4
VS⊕2.6-4
VS⊕2.6-4
7
VS⊕2.6-4
5
5
W-4.2
5
4
W-4.2
5
W-4.2
5
3
W-4.2
1
2
1

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
2-1	82-150-255-01		Push-key	SD-L22	2	
2-2	82-150-319-01		Push-key (Blue)	SD-L22	1	
2-3	82-150-320-01		Push-key (Green)	SD-L22	1	
2-4	82-150-318-01		Push-key (Red)	SD-L22	1	
2-5	82-150-321-01		Spring, Push-key	SD-L22	1	
2-6	82-150-253-02		Lever, Stopper	SD-L22	1	
2-7	82-150-316-01		Counter	SD-L22	1	
2-8	82-150-252-01		Holder, Lever	SD-L22	1	
2-9	82-150-339-01		Belt, Reel platform	SD-L22	1	
2-10	82-150-276-01		Pulley plate ass'y	SD-L22	1	
2-11	82-150-294-01		Belt, Counter	SD-L22	1	
2-12	82-150-317-01		Shaft, Push-key	SD-L22	1	
2-13	82-150-325-01		Spring, REC lever	SD-L22	1	
2-14	82-150-282-01		REC lever ass'y	SD-L22	1	
2-15	82-150-242-01		Holder, REC SW plate spring	SD-L22	1	
2-16	82-150-281-01		REC SW holder ass'y	SD-L22	1	
2-17	82-150-330-01		Spring, REC	SD-L22	1	
2-18	82-150-254-01		Holder	SD-L22	1	
2-19	82-484-356-01		Spacer, Bracket		2	
2-20	82-150-223-01		CAS bracket B	SD-L22	1	
2-21	82-150-263-01		PR spring holder	SD-L22	1	
2-22	82-150-262-01		CAS bracket A Ass'y	SD-L22	1	
2-23	82-150-260-01		Cassette case ass'y	SD-L22	1	
2-24	82-150-342-01		CAS stopper	SD-L22	1	
2-25	82-150-237-01		Holder, SSW	SD-L22	1	
2-26	82-150-275-01		Holder UD plate ass'y	SD-L22	1	
2-27	82-150-326-01		Spring, UD plate	SD-L22	1	
2-28	82-150-328-01		Spring, Stop lever	SD-L22	1	
2-29	82-150-261-01		Holder UD lever ass'y	SD-L22	1	
2-30	82-150-278-01		Mechanism chassis ass'y	SD-L22	1	

EXPLODED VIEW–3


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
VS⊕2.6-4
W28-5-05
U⊕2-4
29
U⊕2-4
U⊕2-4
W2.2-6-0.4
27
28
STE-2
26
56
STE-3
STE-3
30
STE-1.5
31
32
33
STE-3
STE-2
34
STE-1.5
W-2
41
STE-2
40
STE-2
39
M
42
SS⊖2-4
SS⊖2-4
VS⊕2.6-4
U⊕2-4
S6
43
25
Ⓐ
24
23
STE-1.5
W2.1-7-0.5
38
STE-1.5
36
37
STE-2
20
W-2
35
VS⊕2-4
STE-2
22
21
19
18
VS⊕2.6-4
W2.6-7.5-05
W2.6-7.5-0.5
STE-3
17
16
Ⓐ
45
44
STE-2
STE-2
SOL1
15
Q⊕2-4
Q⊕2-4
U⊕2.6-3
14
13
12
46
52
STE-2
51
9
8
STE-1.5
47
48
50
STE-2
53
Q⊕2-4
Q⊕2-4
54
7
3
6
49
STE-2
11
STE-4
10
W-4.2
W-2
55
5
W-4.2
2
4
57
STE-3
1
STE-3

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-150-251-01		Pulley, Counter	SD-L22	1
3-2	82-150-311-01		Shaft, REW reel	SD-L22	1
3-3	82-150-327-01		Spring, STE lever	SD-L22	1
3-4	82-150-240-01		Lever, FF	SD-L22	1
3-5	82-150-239-01		Lever, REW	SD-L22	1
3-6	82-150-329-01		Spring, FRD lever	SD-L22	2
3-7	82-150-238-01		Lever, STE	SD-L22	1
3-8	82-150-286-01		Lock spring	SD-L22	1
3-9	82-150-285-01		Cam plate	SD-L22	1
3-10	82-150-295-01		Screw (for thrust adjustment)	SD-L22	1
3-11	82-150-296-01		Nut, Flywheel bearing	SD-L22	1
3-12	82-150-274-01		Flywheel bearing ass'y	SD-L22	1
3-13	82-150-292-01		Belt	SD-L22	1
3-14	82-150-290-01		Flywheel ass'y	SD-L22	1
3-15	82-150-291-01		Flywheel bearing shaft ass'y	SD-L22	1
3-16	82-150-298-01		FF arm ass'y	SD-L22	1
3-17	82-150-337-01		Spring, FF arm	SD-L22	1
3-18	82-484-371-01		Steel ball		1
3-19	82-150-304-01		HP slide plate spring	SD-L22	1
3-20	82-150-338-01		Spring, Clutch lever	SD-L22	1
3-21	82-150-280-01		REC lock plate ass'y	SD-L22	1
3-22	82-150-346-01		Spring, REC lock	SD-L22	1
3-23	82-150-279-01		Pause lever ass'y	SD-L22	1
3-24	82-484-281-01		Spring, FRD lever		1
3-25	82-484-328-01		HP spacer		1
3-26	82-150-264-01		PR lever F ass'y	SD-L22	1
3-27	82-150-273-01		Stopper, Head	SD-L22	1
3-28	82-150-271-01		Spring, Azimuth	SD-L22	1
3-29	82-150-272-01		Post A, Azimuth	SD-L22	1
3-30	82-150-270-01		Head plate ass'y	SD-L22	1
3-31	82-484-290-01		HP spring		1
3-32	82-150-302-01		HP lock spacer	SD-L22	1
3-33	82-150-307-01		Spring, Brake	SD-L22	1
3-34	82-150-306-01		Brake lever	SD-L22	1
3-35	82-150-312-01		BT spring	SD-L22	1
3-36	82-150-310-01		Take up reel platform ass'y	SD-L22	1
3-37	82-150-248-01		Cam, Pause	SD-L22	1
3-38	82-150-308-01		Idler ass'y	SD-L22	1
3-39	82-150-297-01		REW arm ass'y	SD-L22	1
3-40	82-150-336-01		Spring, REW arm	SD-L22	1
3-41	82-150-309-01		Supply reel platform ass'y	SD-L22	1
3-42	82-150-267-01		Pulley, Motor	SD-L22	1
3-43	82-150-225-01		Holder, SW	SD-L22	1
3-44	82-150-284-01		Spring, Solenoid	SD-L22	1
3-45	82-150-265-01		Lock eject plate ass'y	SD-L22	1
3-46	82-150-241-01		Tension pulley	SD-L22	1
3-47	82-484-377-01		Roller, SFR lever		1
3-48	82-150-301-01		Shaft, HP lock	SD-L22	1
3-49	82-150-236-01		Lock plate	SD-L22	1
3-50	82-150-288-01		Clutch ass'y	SD-L22	1
3-51	82-150-323-01		Spring lock lever	SD-L22	1
3-52	82-150-268-01		FRD lock lever ass'y	SD-L22	1
3-53	82-150-340-01		Flywheel shaft bearing ass'y	SD-L22	1
3-54	82-150-332-01		Flywheel ass'y (S)	SD-L22	1
3-55	82-150-293-01		Belt, Clutch	SD-L22	1
3-56	82-150-314-01		PR spring F	SD-L22	1
3-57	82-150-354-01		FF lever, SP		1

rt No.	Description
5-241-01	1μF 50V Electrolytic LL
OARD SECTION ≫	
4-611-01	Jack circuit board
9-609-01	Pin jack ass'y (Line out/Play, Line in/ Rec.)
BOARD SECTION ≫	
4-612-01	LED-1 circuit board
7-632-01	LED
BOARD SECTION ≫	
0-634-01	LED-2 circuit board
7-463-01	LED
T BOARD SECTION ≫	
0-615-11	Power circuit board
8-156-01	Transistor, 2SC1815(BL)
7-376-01	Diode, 1B4B41
5-219-01	Fuse, "T", 500mA
8-013-01	Fuse label, "T", 500mA
3-147-01	Fuse clamp
2-903-01	Pin, 3P
CUIT BOARD SECTION ≫	
0-256-01	Auto stop circuit board
0-331-01	Auto stop ass'y
OARD SECTION ≫	
0-231-01	DME circuit board
0-277-01	DME ass'y
CIRCUIT BOARD SECTION ≫	
4-617-01	Power switch circuit board
1-574-01	Push-switch (POWER)
4-743-01	Terminal, 1P
	< **Capacitor** >
2-099-01	0.022μF Ceramic
US ≫	
4-604-01	Power transformer (E model only)
4-605-01	Power transformer (K,G model only)
6-159-01	REC/PB head
6-176-01	Erase head
0-283-01	Solenoid ass'y
0-266-01	DC motor
0-269-01	Leaf switch (AUTO STOP)
0-289-01	Leaf switch (STOP MUTING)
0-287-01	Micro switch (MUTING)
4-877-01	AC power cord (E model only)
4-872-01	AC power cord (K model only)
4-892-01	AC power cord (G model only)

Symbol No.	Part No.	Description
⚠	87-085-166-01	Holder, AC power cord
CON-1	82-150-625-01	3P connector ass'y
CON-2	82-164-622-01	3P connector ass'y
CON-3	82-150-627-01	3P connector ass'y
CON-4	82-150-628-01	3P connector ass'y
	82-164-614-01	Flat cable, 2P
	82-164-615-01	Flat cable, 3P
	82-164-616-01	Flat cable, 3P
	82-150-631-11	Flat cable, 6P
	82-150-632-11	Flat cable, 5P

⚠ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ **MEMO** ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

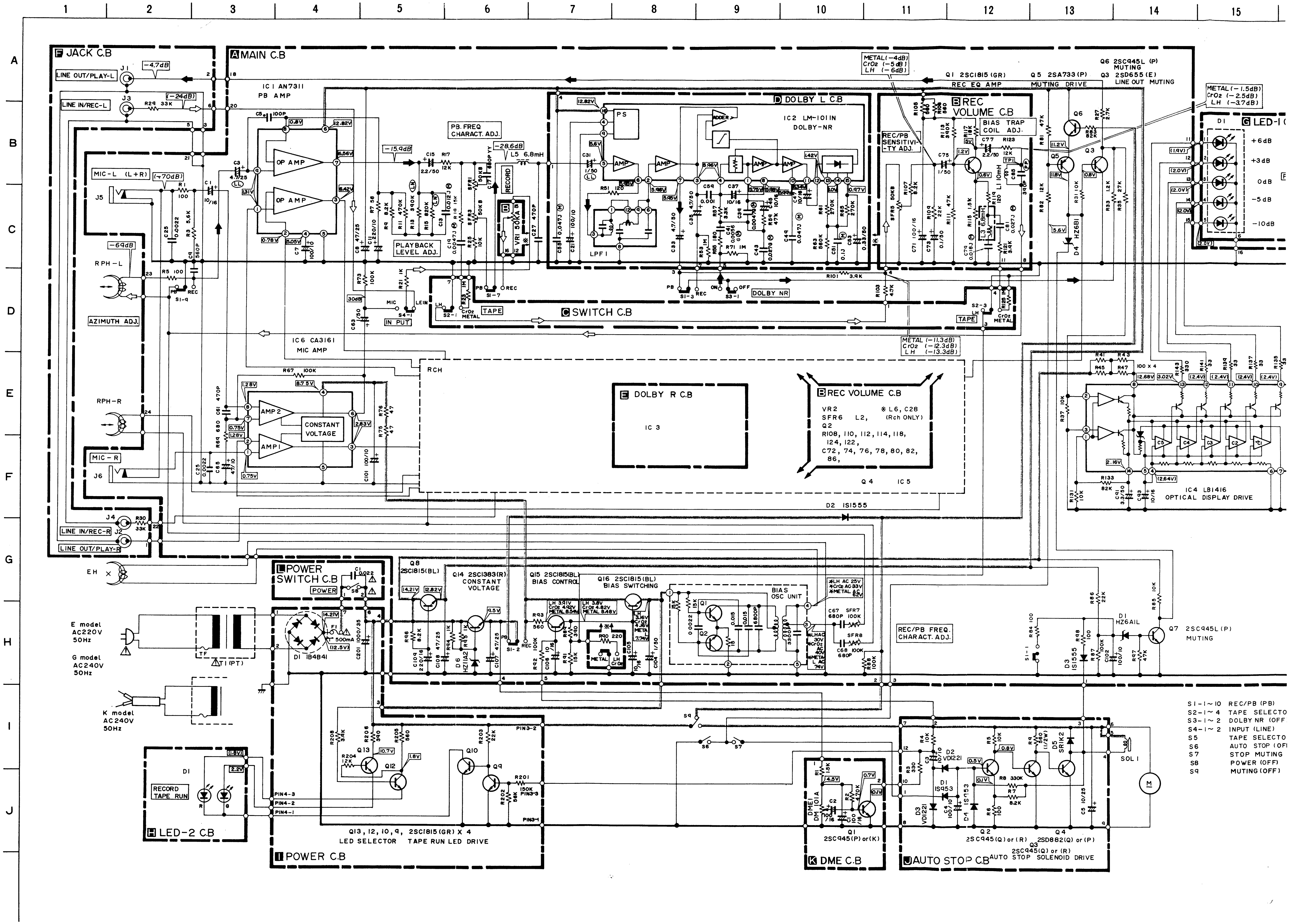
ELECTRICAL MAIN PARTS LIST

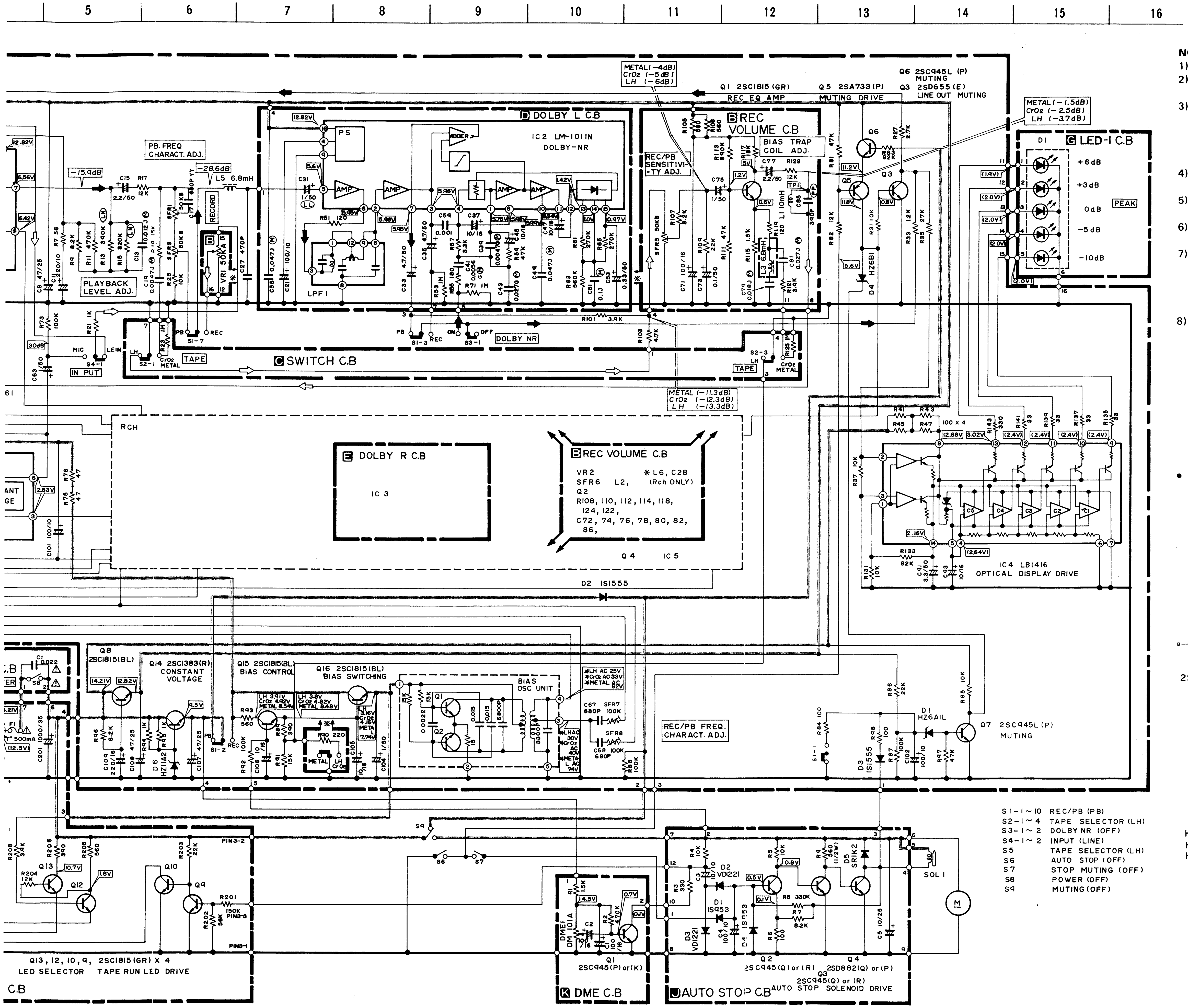
Symbol No.	Part No.	Description
≪MAIN CIRCUIT BOARD SECTION≫		
PCB-A	82-164-607-11	Main circuit board
IC1	87-027-453-01	IC, AN7311
IC4,5	87-027-351-01	IC, LB-1416
IC6	87-027-539-01	IC, LA-3161
Q3,4	89-406-555-01	Transistor, 2SD655(E)
Q5	89-107-336-01	Transistor, 2SA733(P)
Q6,7	89-309-456-01	Transistor, 2SC945L(P)
Q8,15,16	89-318-156-01	Transistor, 2SC1815(BL)
Q14	89-313-833-01	Transistor, 2SC1383(R)
D1,4	87-027-475-01	Zener diode, HZ-6B1
D2,3	87-027-097-01	Diode, 1S1555
D6	87-027-474-01	Zener diode, HZ-11A2
L3,4,5,6	82-371-648-01	Micro inductor coil, 6.8mH
BIAS OSC UNIT	82-164-620-01	Bias OSC unit
J5,6	87-032-952-01	Jack, 6.3ϕ (MIC)
S1	82-164-618-01	Slide switch (REC/PB)
S3	87-031-424-01	Push-switch (DOLBY-NR)
S4	87-031-503-01	Push-switch (INPUT SELECTOR)
SFR1,2,3,4	87-021-469-01	Semi-fixed resistor, 50kΩ-B
SFR7,8	87-021-470-01	Semi-fixed resistor, 100kΩ-B
PIN-1,2	87-032-903-01	Pin, 3P
		< Capacitor >
C3,4	87-015-246-01	4.7µF 25V Electrolytic LL
C109	87-015-480-01	220µF 16V Electrolytic
≪REC VOLUME CIRCUIT BOARD SECTION≫		
PCB-B	82-164-608-01	REC volume circuit board
Q1,2	89-318-155-01	Transistor, 2SC1815(GR)
L1,2	87-008-173-01	Bias trap coil, 10mH
VR1,2	82-164-621-01	Volume, 50kΩ-A
SFR5,6	87-021-469-01	Semi-fixed resistor, 50kΩ-B
		< Capacitor >
C85,86	87-014-047-01	390pF PP
≪SWITCH CIRCUIT BOARD SECTION≫		
PCB-C	82-164-609-01	Switch circuit board
S2	87-031-424-01	Push-switch (TAPE SELECTOR)
S5	87-031-507-01	Push-switch (TAPE SELECTOR)
≪DOLBY-L CIRCUIT BOARD SECTION≫		
PCB-D	82-164-613-01	Dolby-L circuit board
IC2	87-027-381-01	IC, LM1011N
LPF1	87-030-061-01	Low-pass filter
	87-032-637-01	Pin, 7P
		< Capacitor >
C31	87-015-241-01	1µF 50V Electrolytic LL
≪DOLBY-R CIRCUIT BOARD SECTION≫		
PCB-E	82-164-610-01	Dolby-R circuit board
IC3	87-027-381-01	IC, LM1011N
LPF2	87-030-061-01	Low-pass filter
	87-032-637-01	Pin, 7P
		< Capacitor >
C32	87-015-241-01	1µF 50V Electrolytic LL
≪JACK CIRCUIT BOARD SECTION≫		
PCB-F	82-164-611-01	Jack circuit board
J1,2,3,4	82-399-609-01	Pin jack ass'y (Line out/Play, Line in/Rec.)
≪LED-1 CIRCUIT BOARD SECTION≫		
PCB-G	82-164-612-01	LED-1 circuit board
D1,2	87-027-632-01	LED
≪LED-2 CIRCUIT BOARD SECTION≫		
PCB-H	82-150-634-01	LED-2 circuit board
D1	87-027-463-01	LED
≪POWER CIRCUIT BOARD SECTION≫		
⚠ PCB-I	82-150-615-11	Power circuit board
Q9,10,12,13	89-318-156-01	Transistor, 2SC1815(BL)
D1	87-027-376-01	Diode, 1B4B41
⚠ F1	87-035-219-01	Fuse, "T", 500mA
	87-098-013-01	Fuse label, "T", 500mA
⚠	87-033-147-01	Fuse clamp
PIN-3,4	87-032-903-01	Pin, 3P
≪AUTO STOP CIRCUIT BOARD SECTION≫		
PCB-J	82-150-256-01	Auto stop circuit board
	82-150-331-01	Auto stop ass'y
≪DME CIRCUIT BOARD SECTION≫		
PCB-K	82-150-231-01	DME circuit board
	82-150-277-01	DME ass'y
≪POWER SWITCH CIRCUIT BOARD SECTION≫		
⚠ PCB-L	82-164-617-01	Power switch circuit board
⚠ S8	87-031-574-01	Push-switch (POWER)
	82-304-743-01	Terminal, 1P
		< Capacitor >
⚠ C1	87-012-099-01	0.022µF Ceramic
≪MISCELLANEOUS≫		
⚠ T1	82-164-604-01	Power transformer (E model only)
⚠ T1	82-164-605-01	Power transformer (K,G model only)
RPH	87-046-159-01	REC/PB head
EH	87-046-176-01	Erase head
SOL1	82-150-283-01	Solenoid ass'y
M	82-150-266-01	DC motor
S6	82-150-269-01	Leaf switch (AUTO STOP)
S7	82-150-289-01	Leaf switch (STOP MUTING)
S9	82-150-287-01	Micro switch (MUTING)
⚠	87-034-877-01	AC power cord (E model only)
⚠	87-034-872-01	AC power cord (K model only)
⚠	87-034-892-01	AC power cord (G model only)
⚠	87-085-166-01	Holder, AC power cord
CON-1	82-150-625-01	3P connector ass'y
CON-2	82-164-622-01	3P connector ass'y
CON-3	82-150-627-01	3P connector ass'y
CON-4	82-150-628-01	3P connector ass'y
	82-164-614-01	Flat cable, 2P
	82-164-615-01	Flat cable, 3P
	82-164-616-01	Flat cable, 3P
	82-150-631-11	Flat cable, 6P
	82-150-632-11	Flat cable, 5P

⚠ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **MEMO** ☆

SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
F JACK C.B
A MAIN C.B
D DOLBY L C.B
B REC VOLUME C.B
G LED-1
C SWITCH C.B
E DOLBY R C.B
L POWER SWITCH C.B
H LED-2 C.B
I POWER C.B
K DME C.B
J AUTO STOP C.B
LINE OUT/PLAY-L
LINE IN/REC-L
LINE IN/REC-R
LINE OUT/PLAY-R
MIC-L (L+R)
MIC-R
RPH-L
RPH-R
AZIMUTH ADJ.
IC1 AN7311 PB AMP
IC2 LM-1011N DOLBY-NR
IC6 CA3161 MIC AMP
IC4 LB1416 OPTICAL DISPLAY DRIVE
PB. FREQ CHARACT. ADJ.
PLAYBACK LEVEL ADJ.
REC/PB SENSITIVI-TY ADJ.
BIAS TRAP COIL ADJ.
REC/PB FREQ. CHARACT. ADJ.
Q1 2SC1815 (GR) REC EQ AMP
Q5 2SA733 (P) MUTING DRIVE
Q6 2SC945L (P) MUTING
Q3 2SD655 (E) LINE OUT MUTING
Q7 2SC945L (P) MUTING
Q8 2SC1815 (BL)
Q14 2SC1383 (R) CONSTANT VOLTAGE
Q15 2SC1815 (BL) BIAS CONTROL
Q16 2SC1815 (BL) BIAS SWITCHING
BIAS OSC UNIT
D2 1S1555
D1 HZ6AIL
Q13, 12, 10, 9, 2SC1815 (GR) X 4 LED SELECTOR TAPE RUN LED DRIVE
Q1 2SC945 (P) or (K)
Q2 2SC945 (Q) or (R)
Q3 2SC945 (Q) or (R)
Q4 2SD882 (Q) or (P)
AUTO STOP SOLENOID DRIVE
SOL 1
RECORD TAPE RUN
E model AC220V 50Hz
G model AC240V 50Hz
K model AC240V 50Hz
METAL (-4dB) CrO2 (-5dB) LH (-6dB)
METAL (-1.5dB) CrO2 (-2.5dB) LH (-3.7dB)
METAL (-11.3dB) CrO2 (-12.3dB) LH (-13.3dB)
+6dB
+3dB
0dB
-5dB
-10dB
S1-1~10 REC/PB (PB)
S2-1~4 TAPE SELECTO
S3-1~2 DOLBY NR (OFF
S4-1~2 INPUT (LINE)
S5 TAPE SELECTO
S6 AUTO STOP (OF
S7 STOP MUTING
S8 POWER (OFF)
S9 MUTING (OFF)


5 6 7 8 9 10 11 12 13 14 15 16
D DOLBY L C.B
IC2 LM-1011N DOLBY-NR
PS
ADDER
AMP
LPF1
B REC VOLUME C.B
BIAS TRAP COIL ADJ.
REC/PB SENSITIVITY ADJ.
PB. FREQ CHARACT. ADJ.
PLAYBACK LEVEL ADJ.
RECORD
VR1 50KA
METAL (−4dB) CrO2 (−5dB) LH (−6dB)
METAL (−1.5dB) CrO2 (−2.5dB) LH (−3.7dB)
METAL (−11.3dB) CrO2 (−12.3dB) LH (−13.3dB)
−15.9dB
−28.6dB
L5 6.8mH
Q1 2SC1815 (GR) REC EQ AMP
Q5 2SA733 (P) MUTING DRIVE
Q6 2SC945L (P) MUTING
Q3 2SD655 (E) LINE OUT MUTING
G LED-1 C.B
+6dB +3dB 0dB −5dB −10dB
PEAK
C SWITCH C.B
DOLBY NR
TAPE
IN PUT
MIC
LINE
RCH
E DOLBY R C.B
IC 3
B REC VOLUME C.B
VR2 ※L6, C28 SFR6 L2, (Rch ONLY) Q2 R108, 110, 112, 114, 118, 124, 122, C72, 74, 76, 78, 80, 82, 86,
Q4 IC5
IC4 LB1416 OPTICAL DISPLAY DRIVE
D2 1S1555
Q8 2SC1815 (BL)
Q14 2SC1383 (R) CONSTANT VOLTAGE
Q15 2SC1815 (BL) BIAS CONTROL
Q16 2SC1815 (BL) BIAS SWITCHING
BIAS OSC UNIT
REC/PB FREQ. CHARACT. ADJ.
D1 HZ6A1L
Q7 2SC945L (P) MUTING
Q13, 12, 10, 9, 2SC1815 (GR) X 4
LED SELECTOR TAPE RUN LED DRIVE
K DME C.B
Q1 2SC945 (P) or (K)
J AUTO STOP C.B
Q2 2SC945 (Q) or (R)
Q3 2SC945 (Q) or (R)
Q4 2SD882 (Q) or (P)
AUTO STOP SOLENOID DRIVE
SOL 1
M

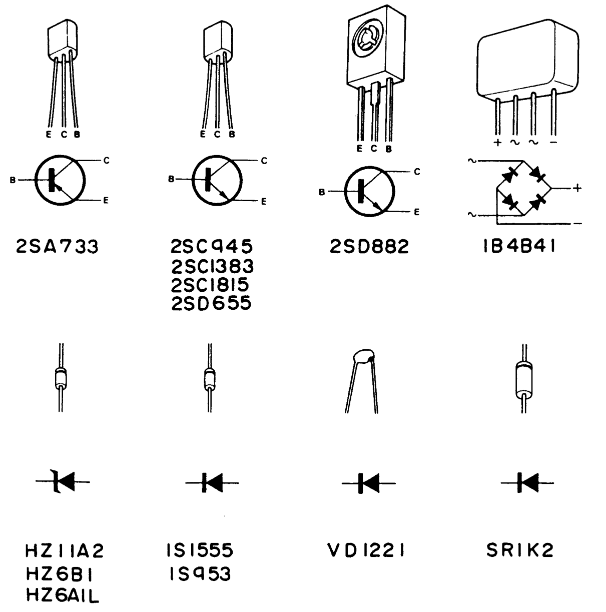
S1-1~10	REC/PB (PB)
S2-1~4	TAPE SELECTOR (LH)
S3-1~2	DOLBY NR (OFF)
S4-1~2	INPUT (LINE)
S5	TAPE SELECTOR (LH)
S6	AUTO STOP (OFF)
S7	STOP MUTING (OFF)
S8	POWER (OFF)
S9	MUTING (OFF)

NOTES:

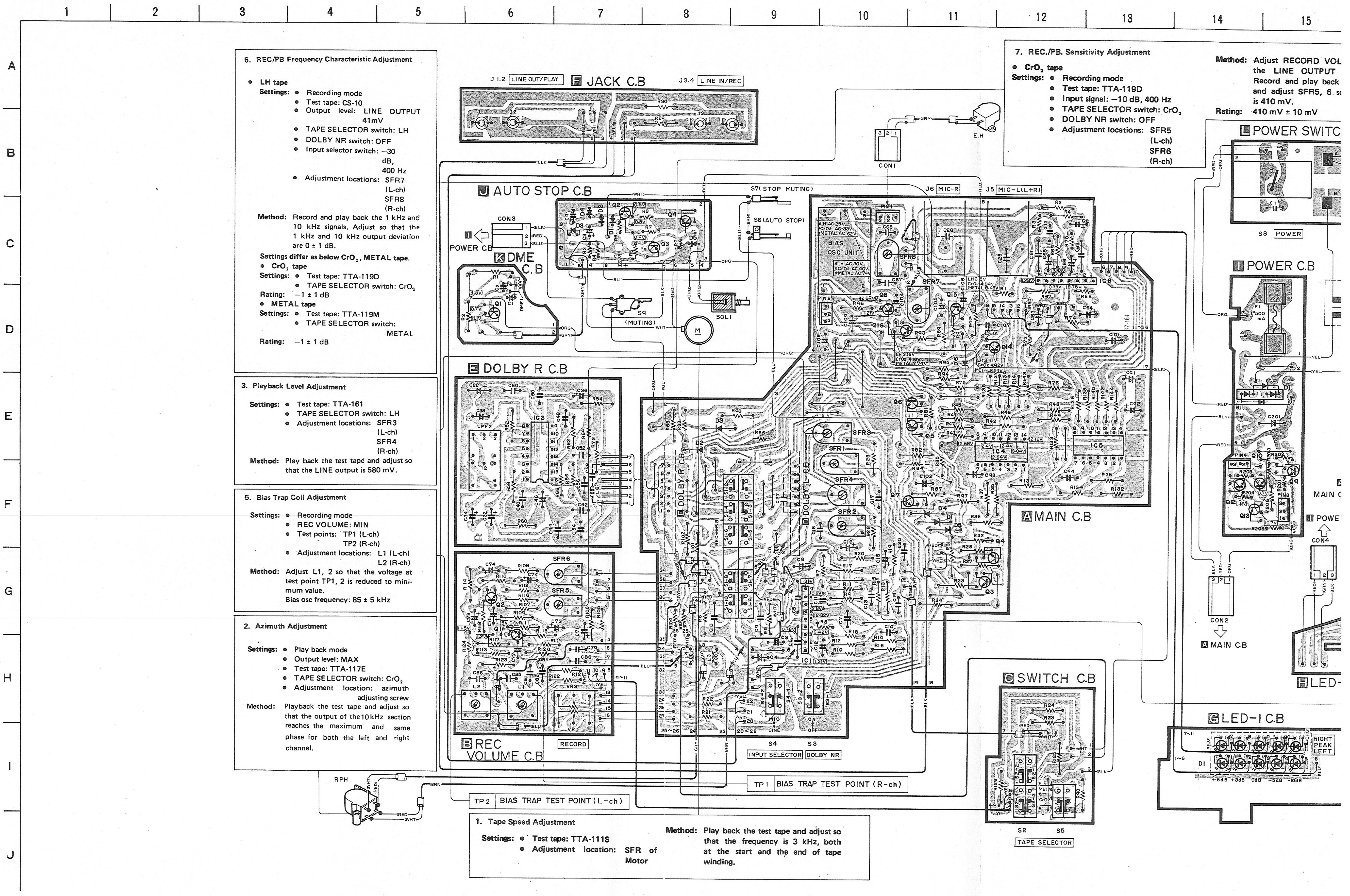
1) ▨ B (+) power supply
2) ➡ Signal path
   ⇨ Rec path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But ( ) is with recording. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of ¼W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerances indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - ⊣⊢ For temperature compensation (SL)
   - ⊣⊢ High dielectric constant system (YY)
   - ⊣⊢ High dielectric constant system (YW, YP, YZ)
   - ⊣⊢ Semiconductor ceramic
8) Explanation of symbols
   - Ⓜ Mylar capacitor
   - (PP) Polypropylene film capacitor
   - (LL) Low-leakage capacitor
   - ⚠ Safety component symbol

   This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.


E C B
2SA733
2SC945
2SC1383
2SC1815
2SD655
2SD882
1B4B41
HZ11A2
HZ6B1
HZ6A1L
1S1555
1S953
VD1221
SR1K2

WIRING


F JACK C.B
J 1.2 LINE OUT/PLAY
J3.4 LINE IN/REC
J AUTO STOP C.B
K DME C.B
E DOLBY R C.B
B REC VOLUME C.B
D DOLBY L C.B
A MAIN C.B
C SWITCH C.B
L POWER SWITC
I POWER C.B
G LED-I C.B
H LED-
CON1
CON2
CON3
CON4
E.H
RPH
S7 (STOP MUTING)
S6 (AUTO STOP)
S9 (MUTING)
SOL1
M
J6 MIC-R
J5 MIC-L(L+R)
S8 POWER
S4 INPUT SELECTOR
S3 DOLBY NR
S2 S5 TAPE SELECTOR
RECORD
SFR1
SFR2
SFR3
SFR4
SFR5
SFR6
SFR7
SFR8
BIAS OSC UNIT
RIGHT PEAK LEFT
+6dB +3dB 0dB −5dB −10dB

6. REC/PB Frequency Characteristic Adjustment

- **LH tape**

Settings:
- Recording mode
- Test tape: CS-10
- Output level: LINE OUTPUT 41mV
- TAPE SELECTOR switch: LH
- DOLBY NR switch: OFF
- Input selector switch: −30 dB, 400 Hz
- Adjustment locations: SFR7 (L-ch) SFR8 (R-ch)

Method: Record and play back the 1 kHz and 10 kHz signals. Adjust so that the 1 kHz and 10 kHz output deviation are 0 ± 1 dB.

Settings differ as below CrO_2, METAL tape.

- **CrO_2 tape**

Settings:
- Test tape: TTA-119D
- TAPE SELECTOR switch: CrO_2

Rating: −1 ± 1 dB

- **METAL tape**

Settings:
- Test tape: TTA-119M
- TAPE SELECTOR switch: METAL

Rating: −1 ± 1 dB

3. Playback Level Adjustment

Settings:
- Test tape: TTA-161
- TAPE SELECTOR switch: LH
- Adjustment locations: SFR3 (L-ch) SFR4 (R-ch)

Method: Play back the test tape and adjust so that the LINE output is 580 mV.

5. Bias Trap Coil Adjustment

Settings:
- Recording mode
- REC VOLUME: MIN
- Test points: TP1 (L-ch) TP2 (R-ch)
- Adjustment locations: L1 (L-ch) L2 (R-ch)

Method: Adjust L1, 2 so that the voltage at test point TP1, 2 is reduced to minimum value.
Bias osc frequency: 85 ± 5 kHz

2. Azimuth Adjustment

Settings:
- Play back mode
- Output level: MAX
- Test tape: TTA-117E
- TAPE SELECTOR switch: CrO_2
- Adjustment location: azimuth adjusting screw

Method: Playback the test tape and adjust so that the output of the 10kHz section reaches the maximum and same phase for both the left and right channel.

7. REC./PB. Sensitivity Adjustment

- **CrO_2 tape**

Settings:
- Recording mode
- Test tape: TTA-119D
- Input signal: −10 dB, 400 Hz
- TAPE SELECTOR switch: CrO_2
- DOLBY NR switch: OFF
- Adjustment locations: SFR5 (L-ch) SFR6 (R-ch)

Method: Adjust RECORD VOL the LINE OUTPUT Record and play back and adjust SFR5, 6 so is 410 mV.

Rating: 410 mV ± 10 mV

TP1 BIAS TRAP TEST POINT (R-ch)

TP2 BIAS TRAP TEST POINT (L-ch)

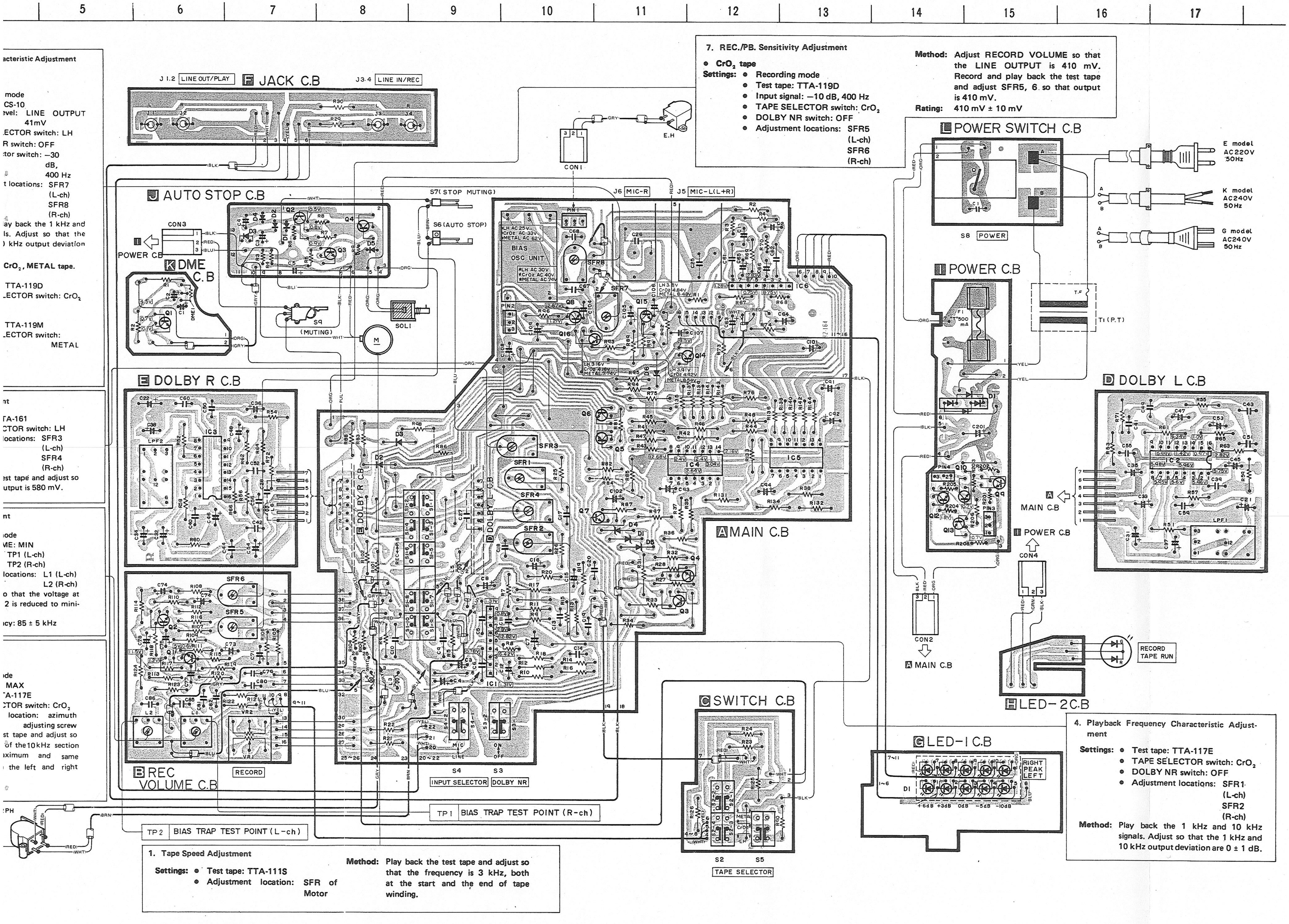
1. Tape Speed Adjustment

Settings:
- Test tape: TTA-111S
- Adjustment location: SFR of Motor

Method: Play back the test tape and adjust so that the frequency is 3 kHz, both at the start and the end of tape winding.

NOTES (1) ▨ B(+) Pattern ▩ Others pattern

(2) The voltage is the reference value measurec with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.


5
6
7
8
9
10
11
12
13
14
15
16
17
F JACK C.B
J 1.2 LINE OUT/PLAY
J3.4 LINE IN/REC
J AUTO STOP C.B
K DME C.B
E DOLBY R C.B
B REC VOLUME C.B
RECORD
A MAIN C.B
BIAS OSC UNIT
S7 (STOP MUTING)
S6 (AUTO STOP)
S9 (MUTING)
SOL I
M
J6 MIC-R
J5 MIC-L(L+R)
CON1
E.H
L POWER SWITCH C.B
S8 POWER
E model AC220V 50Hz
K model AC240V 50Hz
G model AC240V 50Hz
I POWER C.B
T1 (P.T)
D DOLBY L C.B
A MAIN C.B
I POWER C.B
CON4
CON2
A MAIN C.B
H LED-2 C.B
RECORD TAPE RUN
C SWITCH C.B
S2
S5
TAPE SELECTOR
G LED-1 C.B
RIGHT PEAK LEFT
+6dB +3dB 0dB -5dB -10dB
S4
S3
INPUT SELECTOR
DOLBY NR
TP1 BIAS TRAP TEST POINT (R-ch)
TP2 BIAS TRAP TEST POINT (L-ch)
PH

acteristic Adjustment

mode
CS-10
evel: LINE OUTPUT
41mV
ECTOR switch: LH
R switch: OFF
tor switch: −30
dB,
400 Hz
t locations: SFR7
(L-ch)
SFR8
(R-ch)
lay back the 1 kHz and
ls. Adjust so that the
kHz output deviation

CrO₂, METAL tape.

TTA-119D
ECTOR switch: CrO₂

TTA-119M
ECTOR switch:
METAL

---

nt

TA-161
CTOR switch: LH
locations: SFR3
(L-ch)
SFR4
(R-ch)
est tape and adjust so
utput is 580 mV.

---

nt

ode
ME: MIN
TP1 (L-ch)
TP2 (R-ch)
locations: L1 (L-ch)
L2 (R-ch)
o that the voltage at
2 is reduced to mini-

cy: 85 ± 5 kHz

---

de
MAX
A-117E
CTOR switch: CrO₂
location: azimuth
adjusting screw
st tape and adjust so
of the 10 kHz section
ximum and same
the left and right

---

7. REC./PB. Sensitivity Adjustment

- **CrO₂ tape**

Settings:
- Recording mode
- Test tape: TTA-119D
- Input signal: −10 dB, 400 Hz
- TAPE SELECTOR switch: CrO₂
- DOLBY NR switch: OFF
- Adjustment locations: SFR5 (L-ch) SFR6 (R-ch)

Method: Adjust RECORD VOLUME so that the LINE OUTPUT is 410 mV. Record and play back the test tape and adjust SFR5, 6 so that output is 410 mV.

Rating: 410 mV ± 10 mV

---

4. Playback Frequency Characteristic Adjustment

Settings:
- Test tape: TTA-117E
- TAPE SELECTOR switch: CrO₂
- DOLBY NR switch: OFF
- Adjustment locations: SFR1 (L-ch) SFR2 (R-ch)

Method: Play back the 1 kHz and 10 kHz signals. Adjust so that the 1 kHz and 10 kHz output deviation are 0 ± 1 dB.

---

1. Tape Speed Adjustment

Settings:
- Test tape: TTA-111S
- Adjustment location: SFR of Motor

Method: Play back the test tape and adjust so that the frequency is 3 kHz, both at the start and the end of tape winding.

NOTES (1) ▒ B(+) Pattern ▓ Others pattern

(2) The voltage is the reference value measurec with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

800725(1)–Z

ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-164-856-11		Printed indiv., Packing	*	1
2	82-164-852-01		Cushion L, Printed indiv.	*	1
3	82-164-853-01		Cushion R, Printed indiv.	*	1
4	87-051-130-11		Poly-vinyl sack (for screw)		1
5	87-051-135-11		Poly-vinyl sack (for AC power cord)		1
6	87-056-603-01		Poly-vinyl sack (for case)		1
7a	82-164-910-01		Instructions booklet (E model only)	*	1
7b	82-164-911-01		Instructions bookelt (K model only)		1
7c	82-164-909-01		Instructions bookelt (G model only)		1
8	87-051-171-11		Poly-vinyl sack (for instruction)		1
9	87-056-009-41		Distributors list		1
10	86-156-001-01		Handle		2
11	86-944-016-01		Connection cord CW-129DSK		2
12	87-056-008-11		Label, AC power cord (K model only)		1
13	87-056-032-01		Guarantee card (G model only)		1

AIWA CO.,LTD.

Printed in Japan